

**San Mateo WMA WORK PLAN
Supplemental Project**

2 YEAR CONTRACT: January 1, 2011 – December 31, 2012

Contract Lead Group (County, RCD, or Other) and contact information:

Group: San Mateo Department of Agriculture

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**SUPPLEMENTAL PROJECT
San Mateo County WMA Supplemental Project Proposal**

WMA Supplemental Proposal COVER SHEET

Supplemental Project Manager (contact for reporting and invoicing) and contact information:

Primary:

John Trewin, Title: Park Ranger III, San Mateo County Department of Parks and Recreation

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Secondary:

Name: Bill Korbholz, Title: Director, Friends of Edgewood

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Supplemental Executive Summary (MAX 10 lines):

Edgewood County Park is a 467-acre Natural Preserve in San Mateo County. Its varied geology and topography support more than 520 plant taxa. The preserve hosts 5 plant and animal taxa listed in USFWS Recovery Plan for Serpentine Soil Species of San Francisco Bay Area. Another 8 plants are listed rare by the California Native Plant Society (CNPS). Edgewood is the site of an ongoing reintroduction of the federally threatened Bay checkerspot butterfly, and is an historic host of the federally endangered fountain thistle. The project's goal is to protect high value sites at Edgewood Natural Preserve. This project begins new weed treatment in the critically endangered San Mateo thornmint habitat, and provides follow up to treatment begun with temporary funding sources. Combined with USFWS Partners for Fish and Wildlife funding, it tackles the most pressing invasive plant issues affecting Edgewood's rare species.

Your WMA's TOP THREE Accomplishments over the past 2 years (Max- 2 lines each):

1. Developed a management plan for the control and eradication of slender false brome (*Brachypodium sylvaticum*) which threatens San Mateo County's redwood forests.
2. Control and containment of Canary Island St. John's wort (*Hypericum canariense*) on the county's south coast which invades and replaces the native coastal scrub.
3. Grassland preservation at Edgewood County Park and Natural Preserve by reducing non-native weed cover that threaten many of Edgewood's rare species.

Supplemental Summary of Methods Used (MAX 4 lines) :

This project uses mechanical methods, combined with intensive hand follow up from a dedicated and botanically educated volunteer crew. Chemical treatments are not authorized at this preserve, based on the presence of rare species and high native biodiversity. The suggested treatments have previously been successful at reducing the target species in the Preserve.

Supplemental Summary of Net and Gross Acres:

Estimated Net acres or number of plants proposed to actually treat: 11 acres

Gross acres or total ground proposed to survey/cover while conducting treatments: 30 acres

Estimated Total Cost per acre for proposed treatments: \$1816/acre

Supplemental Summary of In-Kind Contributions toward the Project (MAX 4 lines):

\$132,800: Edgewood's Volunteer weeders, docents, and administrative support

\$14,400: USFWS's Partners for Fish and Wildlife

\$14,400: Consulting Biologist

Supplemental Project Title: Preservation of Edgewood's High-Value Habitats

Priority Topic Area Being Addressed (from request for proposal announcement):

High-value sites

Supplemental Project Goal (6 LINES MAX):

The project goal is to control invasive weeds encroaching on the habitats of the following sensitive species at Edgewood Natural Preserve: White-rayed pentachaeta (endangered, *Pentachaeta bellidiflora*), San Mateo thornmint (endangered, *Acanthomintha duttonii*), Bay checkerspot butterfly (threatened, *Euphydryas editha bayensis*), Fragrant fritillary (CNPS 1B.2, *Fritillaria liliacea*). The checkerspot occurs in only a few locations, the pentachaeta is found only at Edgewood and an adjacent parcel, and the thornmint occurs nowhere else in the world.

What are the project's long-term benefits and/or region-wide significance (6 LINES MAX):

Many of Edgewood's rare species are persisting in small but high-quality serpentine grassland patches. Invasive plants pose a constant threat to these small populations, through competition and further habitat fragmentation. Enhancement of the surrounding matrix may accelerate recovery by creating additional habitats and further buffers against stochastic events. Controlling weeds is key to providing stability for vulnerable plants and animals at this high-value site.

Supplemental Project Objectives and Methods (1/2 page MAX):

Supplemental Task/Objective 1:

Objective: Control encroachment of Italian ryegrass (*Lolium multiflorum*) into the San Mateo thornmint habitat with spring string cutting and fall raking. This grass is a key threat to this extremely rare plant. A single spring mow has been repeatedly shown to significantly reduce annual grasses in serpentine habitats at Edgewood, leading to an increase in bare ground and native forbs. Fall raking will further reduce thatch that has built up at this 1-acre site.

Supplemental Task/Objective 2:

Objective: Control encroachment of 5 acres of yellow starthistle and 5 acres medusahead in the matrix surrounding the checkerspot butterfly, pentachaeta, and fritillary habitat by mowing. The

two weeds occupy separate areas and will be mowed at the proper phenology. Edgewood volunteers routinely put in 3000+ hours annually and will provide hand followup. The mowing/hand weeding treatment has nearly eradicated yellow starthistle on more than 30 acres at Edgewood. Medusahead mowing has reduced density at Edgewood, and hand followup should improve the efficacy.

Supplemental Performance measures (¼ page max):

How will you quantitatively monitor your project? *Distinguish between year one goals versus long term goals following treatment.*

Each treated area will contain at least one 40 x 200m macroplot containing a grid of 200 points. Point intercept data will be collected during peak bloom before treatment, and compared with the year after treatment. Data will illustrate cover changes in individual species and functional guilds. At the thornmint site, we aim for a 25% relative cover decrease in annual grass in year 1, plus an additional 25% by year 2. At each of the medusahead and yellow starthistle sites, we aim for a relative decrease in each weed of 20% in year 1, plus an additional 30% by year 2. Two years of such treatments should reduce infestations to maintenance levels, where hand pulling and/or in-house mechanical treatments are sufficient to control infestations.